

Attorney Docket No.: FMCE-P101

In the Claims

1 (currently amended): In combination with a fixed offshore hydrocarbon production platform which comprises a deck attached to a base that is secured to the sea floor, the improvement comprising a GTL facility for converting natural gas into a hydrocarbon liquid which comprises:

a syngas reactor for converting the natural gas into syngas; and
a liquids production unit for converting the syngas into the hydrocarbon liquid;

wherein at least one of the syngas reactor and the liquids production unit comprises ~~a catalyst which is constructed using PI micro-reactor technology~~ a monolithic catalyst which includes a solid body, a plurality of discrete channels which extend through the body and comprise walls, and a catalytic material which is deposited on the walls; and

wherein the monolithic catalyst comprises a cell density of between about 100 cells/in² and about 1000 cells/in²; and

wherein the GTL unit is sufficiently small to be located on the deck of the platform.

2 (original): The combination of claim 1, further comprising a gas pre-processing unit for converting the natural gas into a form which is suitable for processing by the syngas reactor.

3 (original): The combination of claim 2, wherein the gas pre-processing unit performs at least one of the following functions on the natural gas: filtering; desulphering and dehydrating.

Attorney Docket No.: FMCE-P101

4 (original): The combination of claim 1, further comprising a hydrocracker unit for converting the hydrocarbon liquid into at least one hydrocarbon fuel.

5 (original): The combination of claim 1, wherein the syngas reactor employs a steam reforming process to convert the natural gas into syngas.

6 (canceled).

7 (canceled).

8 (canceled).

9 (original): The combination of claim 1, wherein the liquids production unit employs a Fisher-Tropsch process to convert the syngas to the hydrocarbon liquid.

10 (canceled).

11 (canceled).

12 (canceled).

13 (currently amended): A GTL facility for a fixed offshore hydrocarbon production platform which comprises a deck attached to a base that is secured to the sea floor, the GTL facility comprising:

a syngas reactor for converting natural gas from a subsea well into syngas; and

a liquids production unit for converting the syngas into a hydrocarbon liquid;

wherein at least one of the syngas reactor and the liquids production unit comprises a monolithic catalyst which includes a solid body, a

Attorney Docket No.: FMCE-P101

plurality of discrete channels which extend through the body and comprise walls,
and a catalytic material which is deposited on the walls; and

wherein the monolithic catalyst comprises a cell density of between
about 100 cells/in² and about 1000 cells/in²; and

wherein the GTL unit is sufficiently small to be located on the deck
of the platform.

14 (canceled).

15 (canceled).

16 (canceled).

17 (canceled).

18 (canceled).

19 (currently amended): The GTL facility of claim ~~[[14]]~~ 13, further
comprising a gas pre-processing unit connected upstream of the syngas reactor
for filtering, desulphering or dehydrating the natural gas.

20 (currently amended): The GTL facility of claim ~~[[14]]~~ 13, further
comprising a hydrocracker unit for converting the hydrocarbon liquid into at least
one hydrocarbon fuel.

21 (new): The combination of claim 1, wherein the monolithic catalyst
comprises a cell density of between about 200 cells/in² and about 600 cells/in².

22 (new): The combination of claim 1, wherein the monolithic catalyst
comprises a cell density of between about 300 cells/in² and about 500 cells/in².

23 (new): The combination of claim 1, wherein the monolithic catalyst
comprises a void fraction of between about 50% and 90%.

Attorney Docket No.: FMCE-P101

24 (new): The combination of claim 1, wherein the monolithic catalyst comprises a wall thickness of between about 0.05 mm and 0.40 mm.

25 (new): The combination of claim 1, wherein the natural gas and the synthesis gas, or the syngas and the hydrocarbon liquid, flow through the channels in a Taylor flow regime which substantially eliminates back mixing.

26 (new): The GTL facility of claim 13, wherein the monolithic catalyst comprises a cell density of between about 200 cells/in² and about 600 cells/in².

27 (new): The GTL facility of claim 13, wherein the monolithic catalyst comprises a cell density of between about 300 cells/in² and about 500 cells/in².

28 (new): The GTL facility of claim 13, wherein the monolithic catalyst comprises a void fraction of between about 50% and 90%.

29 (new): The GTL facility of claim 13, wherein the monolithic catalyst comprises a wall thickness of between about 0.05 mm and 0.40 mm.

30 (new): The GTL facility of claim 13, wherein the natural gas and the synthesis gas, or the syngas and the hydrocarbon liquid, flow through the channels in a Taylor flow regime which substantially eliminates back mixing.

31 (new): The GTL facility of claim 13, wherein the liquids production unit produces hydrogen which is used to generate heat for the conversion of natural gas into syngas in the syngas reactor.